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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,650	10/19/2001	Sean Connolly	1188	6670

7590

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EXAMINER

CAPUTO, LISA M

ART UNIT PAPER NUMBER

2876

DATE MAILED: 08/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/051,650

Applicant(s)

CONNOLLY ET AL.

Examiner

Lisa M Caputo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 13
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Amendment

1. Receipt is acknowledged of the amendment filed 15 May 2003.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(è) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 8, 10, and 12-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Kraus et al. (U.S. Patent No. 5,555,459, from hereinafter "Kraus").

Kraus teaches an antenna means for hand-held data terminals as recited in claims 1-6, 8, 10, and 12-19. Kraus discloses that FIGS. 32 and 33 illustrate a further module (image reader/RF) for assembly with a base module and which may readily incorporate a laser reader system with no moving parts. As seen in FIG. 33, housing 414 is provided with an outwardly protruding seat, 414E, which receives a snap-on cowl piece 510 which serves to retain an optical window 531 covering an elongated generally rectangular opening at the front housing 414. As shown in FIGS. 32 and 33, module 410 has a transverse by extending antenna 546 housed within a dielectric cover 548 (as recited in claims 8 and 10) completely within the confines of the length of housing 414 with cowl 510, and within the width dimension of housing 414. The antenna may be a

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helically wound wire type, and may be carried by fitting 550 having an enlarged base 550A for coupling with the RF circuits 430. This embodiment therefore utilizes a helical wire wound antenna, but encapsulates it or encloses it within the cowl 510 so that it eliminates the problem of damage or breakage if it would extend freely of housing 414 away from housing 414 (as recited in claims 6 and 12-17 of the instant application) (see Figures 32-33, col 14 line 55 to col 15 line 9). Further, Kraus discloses that in the preferred embodiment of the present invention, frame 48 could take on a configuration generally as shown at FIG. 7. Frame 48 would basically attach to the top and back of device 10 and would include components similar to those shown in exploded fashion in FIG. 5 (but not shown in FIG. 7). Additionally, a rectangularly shaped box 7-10 is integrally formed to the rear top of frame 48 as shown in FIG. 7. The interior of box 7-10 is configured to receive a device such as a bar code scanner element (not shown). Such a scanner would have to be moveable into close proximity with bar codes to be read and therefore the top of device 10 and the area around frame 48 must be clear of any structure which would inhibit such placement; this is one reason for the elimination of stub antenna 41 in the preferred embodiment (see Figures 6-7, col 6 line 60 to col 7 line 8).

Hence, Kraus teaches a device that comprises a communication arrangement within a housing (housing 410, 414) having an opening (optical window 531), a cover mounted over the opening (dielectric cover 548) which includes a housing contacting portion (snap-on cowl piece 510), and an antenna (546) mounted within the housing contacting portion of the cover and spaced apart from the housing so that the antenna

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and the opening cooperate to handle signals for the communication arrangement as recited in independent claims 1 and 18-19 of the instant application.

Regarding claim 2, Kraus discloses that FIG. 5 shows an exploded view of the contents of module. 48. FIGS. 1-4 show a conventional helical stub antenna 41 can be used in association with each module for RF transmission and reception (see Figures 1-5, col 5-6).

Regarding claim 3, in an interactive mode, an operator of one of the terminals may input into the data terminal 16-14 via the bar code reader typical S.K.U. (Stock Keeping Unit) numbers. The data read into the terminal 16-14 will appear on the display 16-16 and will also be temporarily stored in RAM. The operator may then enter additional data via the keyboard 16-15, such as for example a quantity of the respective stock item which may have just been added to replenish depleted inventory. Upon a command to transmit the data, the data terminal assembles the entered data into a data message and transfers the message to the transceiver circuit 16-57 for transmission. The base station 16-110 routinely samples each data terminal 16-14 and receives the transmitted data message to forward it to the computer 16-115 (see Figure 16, col 12, lines 11-24).

Regarding claims 4-5, Kraus teaches that by referring to FIGS. 26-29, another embodiment according to the present invention can be seen. Further details are found at co-pending PCT/US90/03282, filed Jun. 7, 1990, which is incorporated by reference hereto. FIG. 26 shows a hand-held data terminal 611 with a display screen 616 and

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keyboard 615 indicated generally on its top surface. A peripheral module 640 may contain automatically operating transducer means comprised of an automatic wireless communications unit and an automatic full image reader unit. Module 640 may be provided with an antenna 641. An optical window is indicated at 642. The window 642 may be housed in a reader extension part 643 (see Figures 26-29, col 14, lines 6-17).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kraus in view of Nguyen et al. (U.S. Patent No. 4,940,992, from hereinafter "Nguyen"). The teachings of Kraus have been discussed above.

Regarding claim 7, Kraus fails to teach that the opening of the housing is a half of the wavelength of the signals at a frequency of operation, and that the opening operates as a loop antenna.

Nguyen discloses that with respect to the figures, FIGS. 1-5 illustrate a construction and performance of a preferred embodiment of the present invention, a low profile hybrid antenna providing a balanced response characteristics to the magnetic and electric field components of an electromagnetic wave. Reference is directed to FIG. 1 which shows an isometric view of the preferred embodiment of the present invention, a low profile antenna 10 capable of operating efficiently over a wide frequency range from 150 MHz to 1000 MHz. As shown, antenna 10 comprises a core 16 and a conductor 14. Conductor 14 is formed into a single turn loop having substantially horizontal parallel opposed sides 15 and 17A-B and substantially vertical parallel opposed sides 19 and 21. Side 17A-B terminates in integral connection tabs 18 which are located symmetrically about the midpoint of side 17, thereby providing a center fed antenna configuration. This single turn loop functions in a conventional manner as a magnetic dipole with the long dimension of the loop typically one-quarter wavelength or less in length at the operation frequency. However, as shown, the loop geometry is somewhat unconventional in that it has an extremely low profile, as is required in a thin sheet-like receiver, and that the connection to the antenna is at the midpoint of the loop, rather than at an endpoint of the loop, as has been typically done previously. The choice of the center fed configuration is not arbitrary, but rather is based on the fact that a substantial improvement in antenna sensitivity is obtained over the end fed

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configuration when the aspect ratio of the sides of the loop, i.e. the horizontally positioned sides 15 and 17 are substantially longer than the vertically positioned sides 19 and 21 as will be discussed with reference to FIG. 5 (see Figures 1-5, col 2 line 40 to col 3 line 5).

In view of the teaching of Nguyen it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a loop antenna and operate at half of a wavelength of the signals because the half-wave electric dipole provides for an antenna responsive to the magnetic and electric fields of an electromagnetic wave. Also, it is favorable to have only one opening with a half wavelength with which to convey information because additional openings would provide for mechanical difficulties.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kraus in view of Ishikawa (U.S. Patent No. 5,162,640). The teachings of Kraus have been discussed above.

Regarding claim 9, Kraus fails to teach that the housing is composed of an electrically conductive material.

Ishikawa teaches a pen type optical reading device. Ishikawa discloses a pen-type bar code scanner shown in those drawings has a housing which comprises a metal-made outer case 1 constructed of three tubular cases 2, 3, 4 threadedly secured to each other, and a cap 5 covering the distal end of the outer case 1, as will be seen from the sectional views of FIGS. 1(a) and 1(b) and the exploded perspective view of FIG. 2 (see Figures 1-2, col 8, lines 49-55).

In view of the teaching of Ishikawa, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a metal electrically conductive housing for a barcode scanner as recited by Kraus because a metal housing is durable and cost effective.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kraus in view of Knowles (U.S. Patent No. 4,805,175). The teachings of Kraus have been discussed above.

Regarding claim 11, Kraus fails to specifically teach that the cover is composed of a plastic or glass material.

Knowles teaches an ultra-compact hand-held laser scanner. Knowles discloses that the front wall 38D includes an opening in which a window 40, formed of an anti-reflective, wavelength selective glass, or some other beam transparent material, e.g. plastic is located (see Figure 3, col 4, lines 23-26). It is well known in the art that glass and plastic are favorable transparent non-electrically conductive materials for which light beams can pass through and are able to scan barcodes and other media.

In view of the teaching of Knowles it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a plastic or glass non-electrically conductive material for the cover of the barcode scanner of Kraus because these materials are readily available, cost-effective, and efficient for their use in allowing light beams to pass through and scan different optical media.

Response to Arguments

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7. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Examiner appreciates applicant's arguments that Kodukula fails to suggest a device which includes an antenna mounted within a housing contacting portion of a cover and spaced from the housing so that the antenna and an opening cooperate to handle signals for a communication arrangement and has supplied new prior art in the form of Kraus to overcome this limitation.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Lisa M. Caputo** whose telephone number is **(703) 308-8505**. The examiner can normally be reached between the hours of 8:30AM to 5:00PM Monday through Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 703-305-3503. The fax phone number for this Group is (703)308-7722, (703)308-7724, or (703)308-7382.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**lisa.caputo@uspto.gov**].

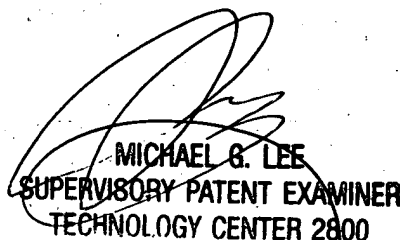
All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



LMC

July 24, 2003


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